

Patent Abstracts of Japan

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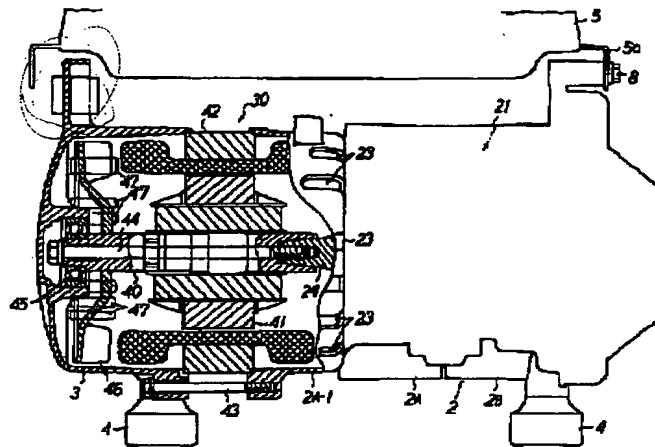
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APPLICANT : YAMAHA MOTOR CO LTD;

INVENTOR : YOKOKURA MAKOTO;

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H02K 9/06

TITLE : ENGINE GENERATOR



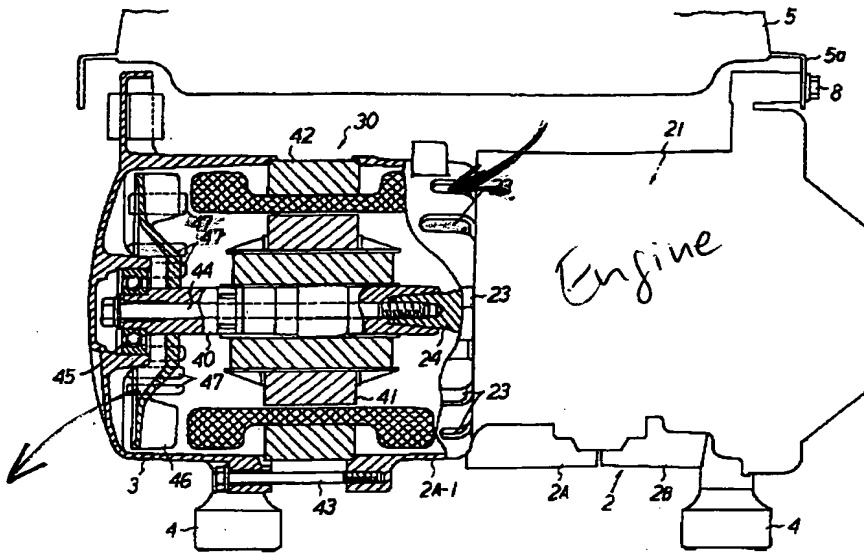
ABSTRACT : PURPOSE: To make the inside of an engine generator visible through ventilation holes and obtain high assembly efficiency by a method wherein a frame is approximately formed into a bowl shape to cover the end of a rotor shaft and ventilation holes through which cooling air flows are provided on the side surfaces and the frame support part of the rotor shaft is so provided as to be seen through the ventilation holes.

CONSTITUTION: A generator 30 is composed of a rotor shaft 40 which is coaxially linked with the crank shaft 24 of an engine 21, a rotor 41, a stator 42, etc., and is housed in a space which is defined by a frame 3 which is formed approximately into a bowl shape so as to be in one-piece with a part 2A-1 of the divided piece 2A of a crank case 2. A plurality of ventilation holes 47 through which cooling air which cools the inside of the generator 30 is exhausted are provided on the side surfaces of the frame 3 which is approximately formed into a bowl shape. When ball bearings 45 are coupled with the frame 3 in order to attach the rotor shaft 40 to the frame 3, the coupling state can be confirmed by observing the inside visually through the ventilation holes 47. As a result, the rotor shaft and the frame can be assembled with high workability.

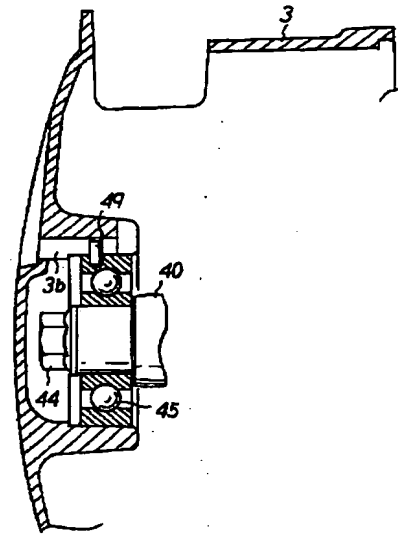
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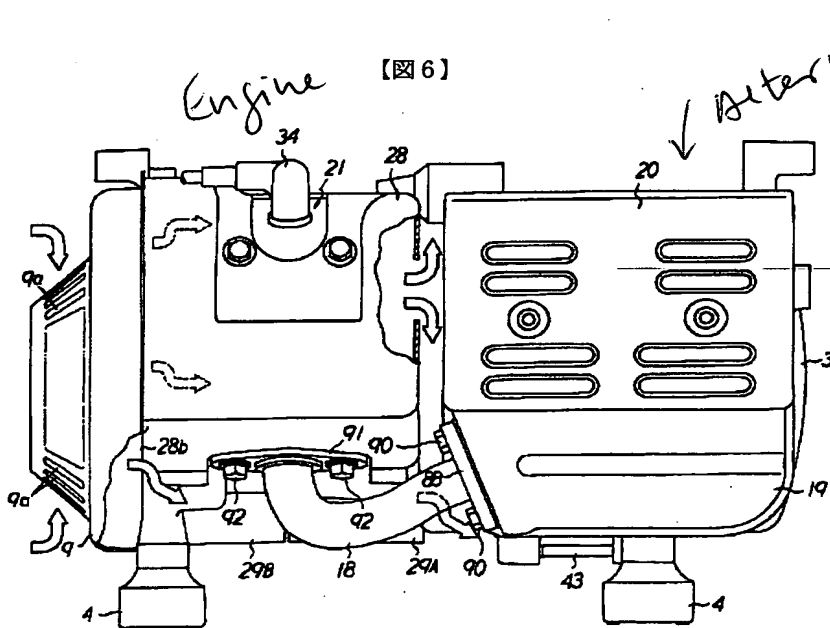
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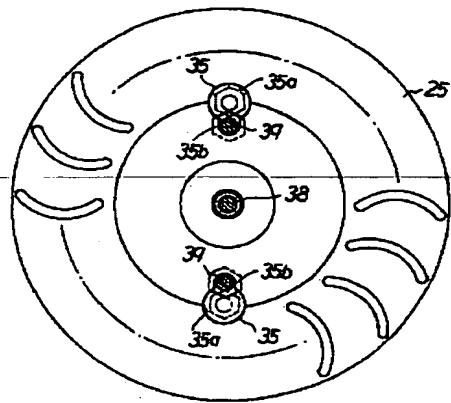
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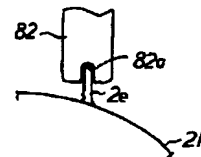
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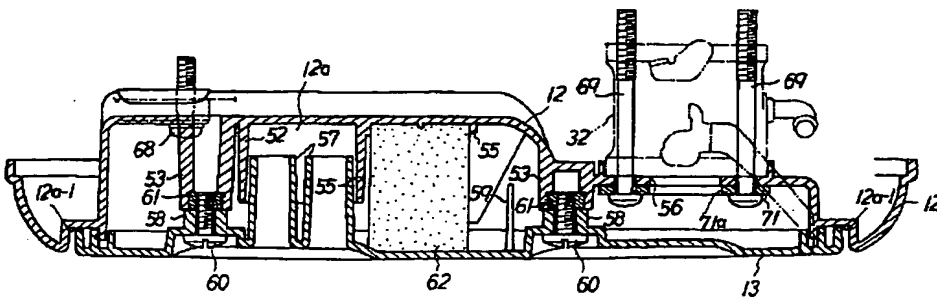
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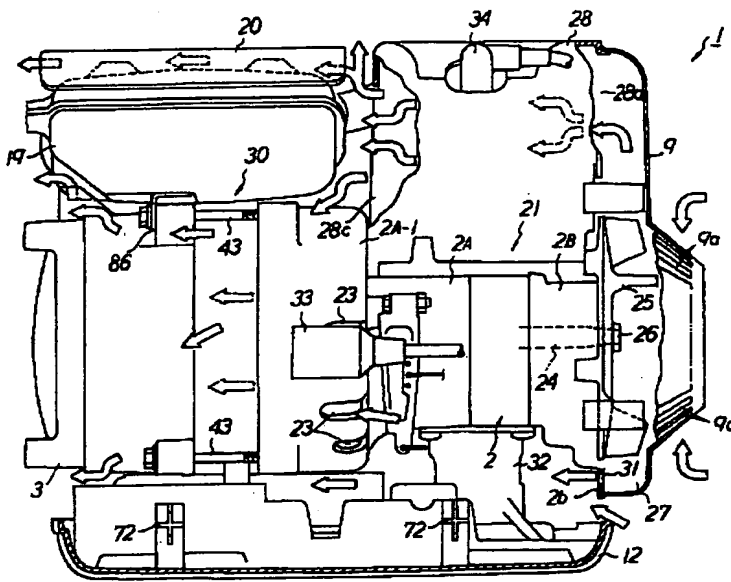
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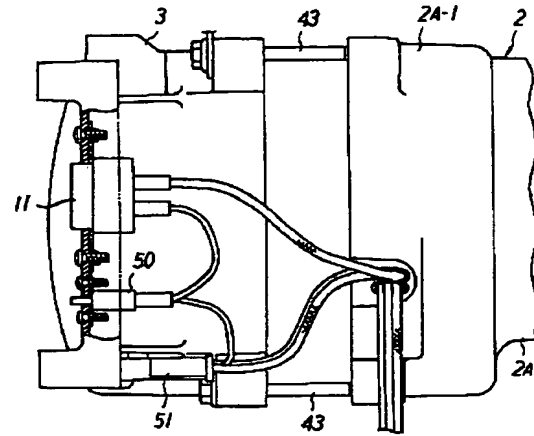
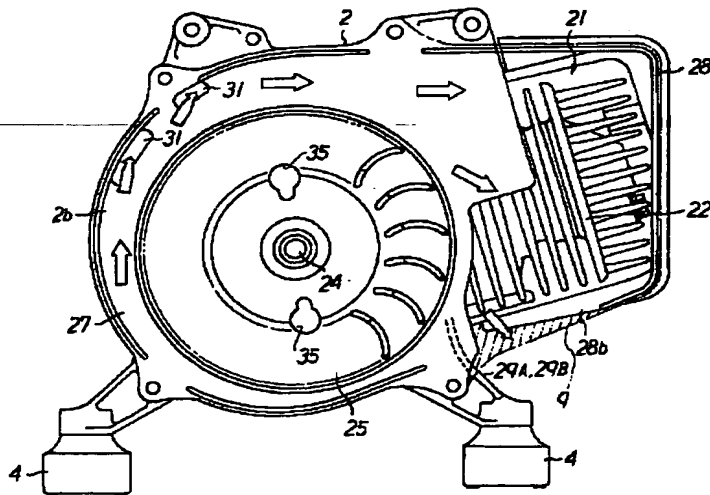
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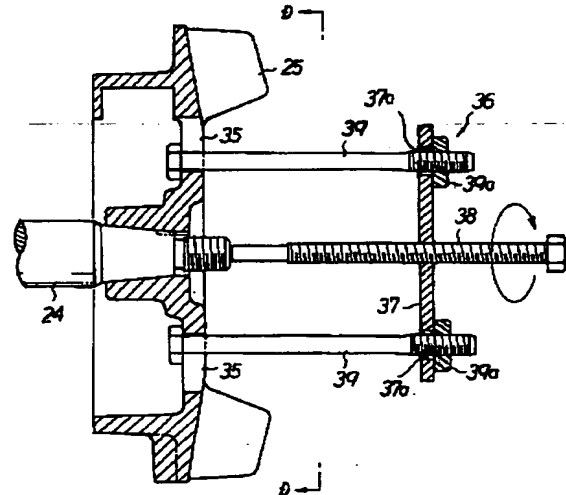
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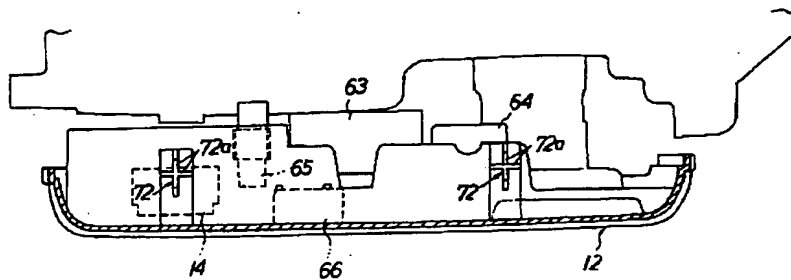
【図 10】

【図 8】 *Engine side*

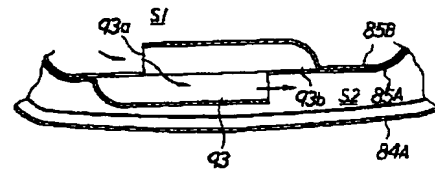
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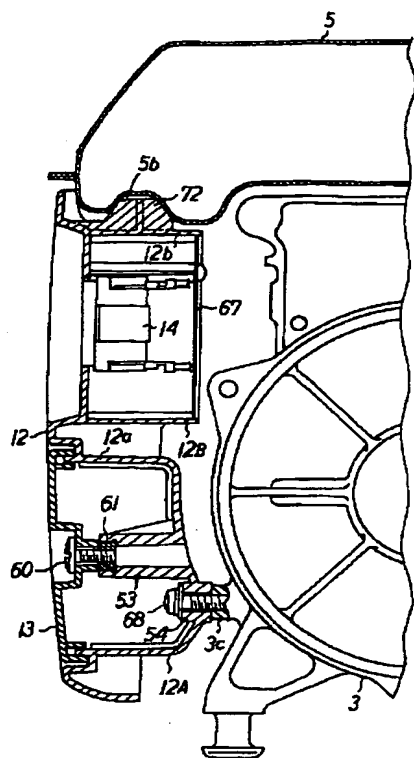
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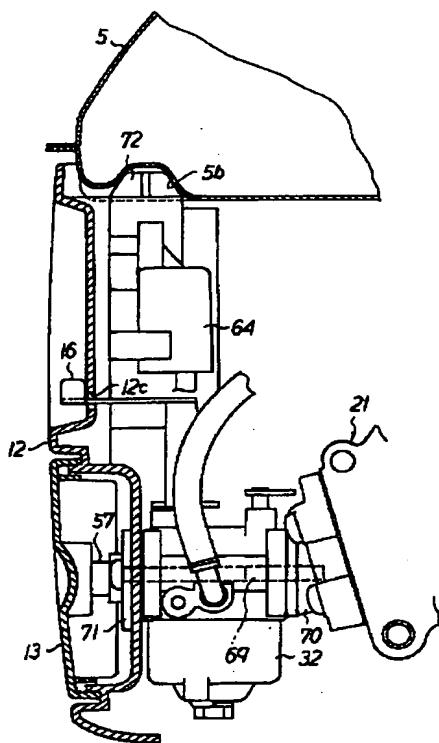
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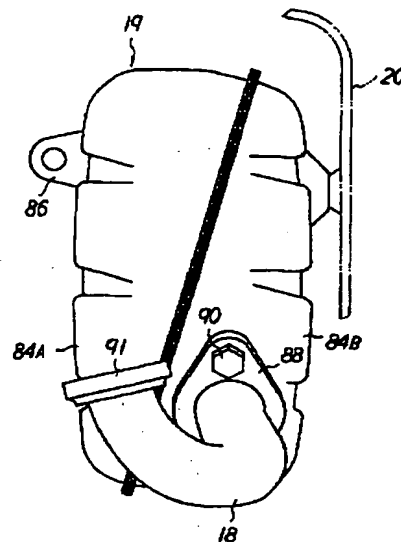
【図 13】



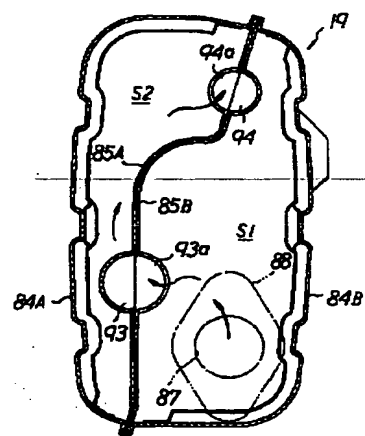
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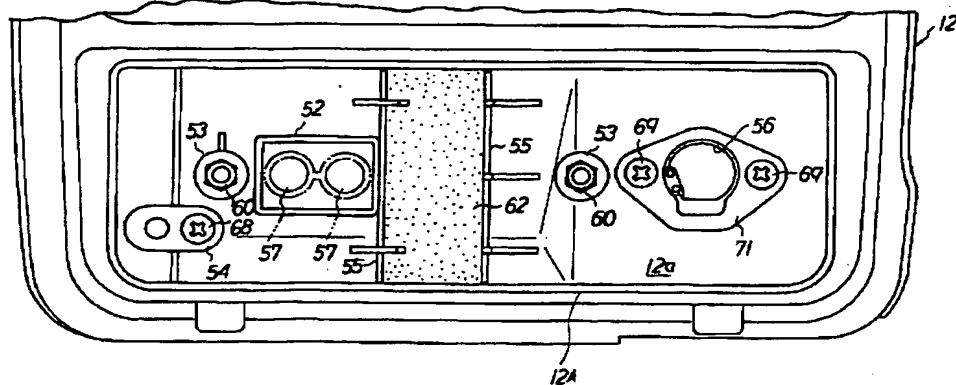
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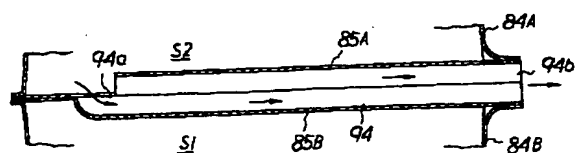
【図 25】



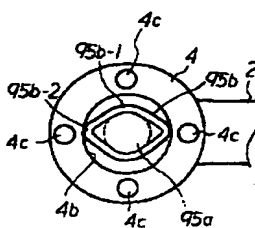
【図 16】



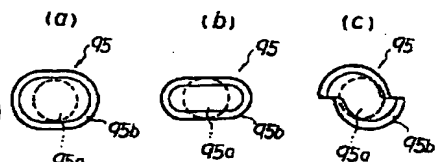
【図 27】



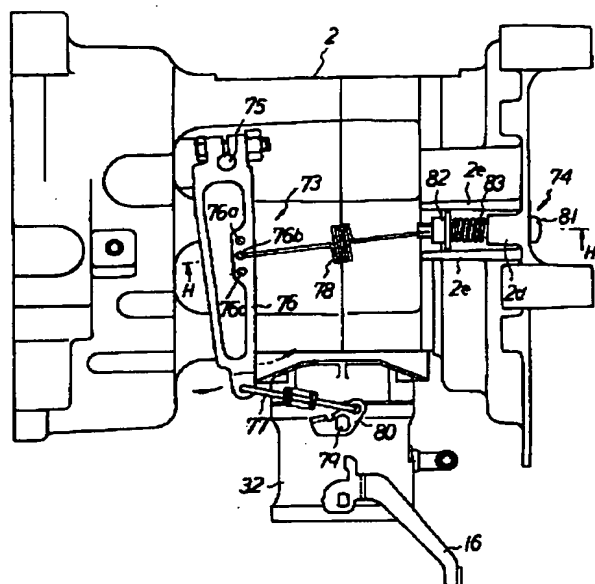
【図 29】



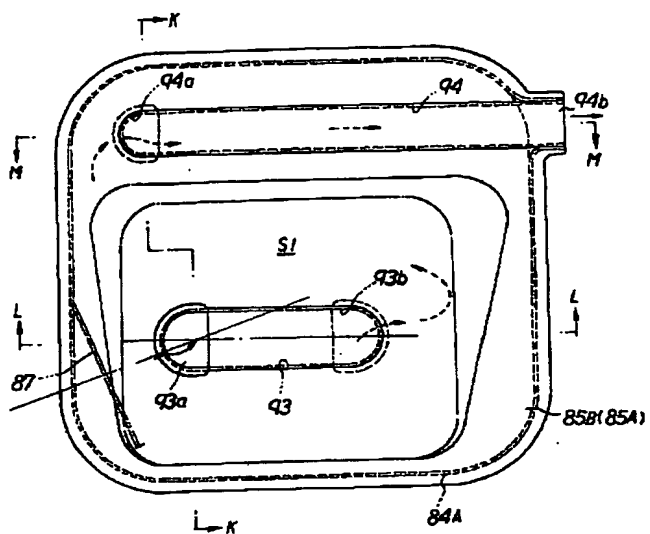
【図 30】



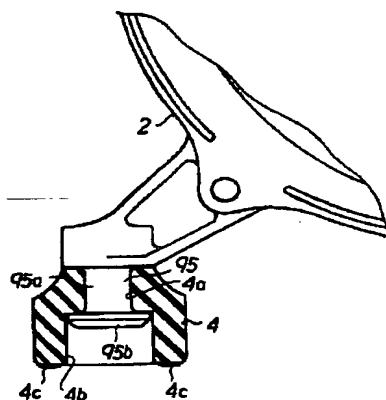
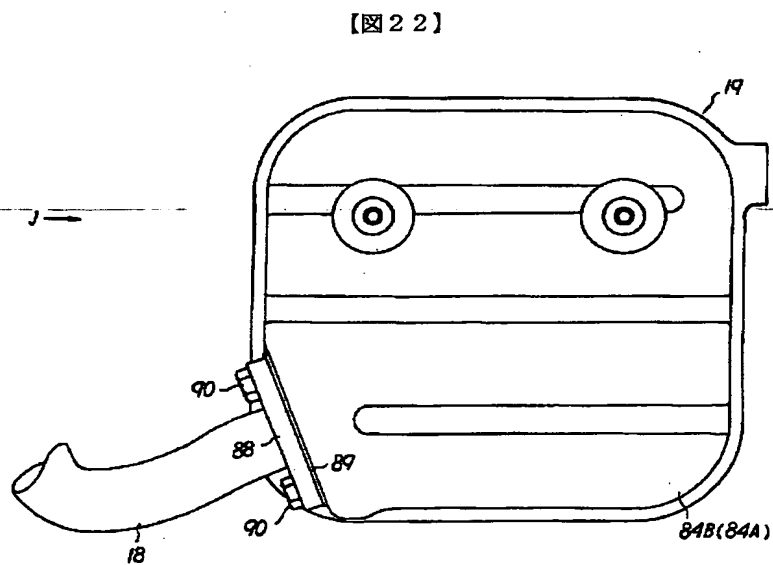
【図 18】



【図 24】



【図 28】



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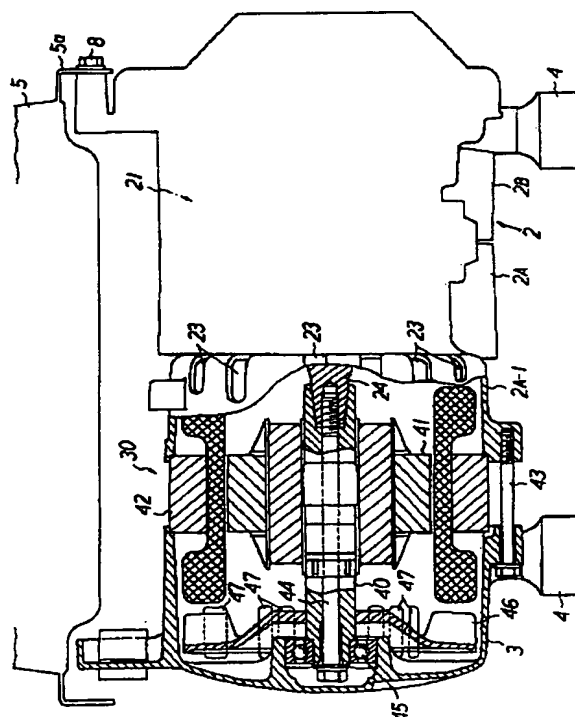
弁理士 山下 亮一

(54) 【発明の名称】 エンジン発電機

(57) 【要約】

【目的】 ロータ軸のフレームへの軸支部を目視で確認することによって高い組付作業性を確保するとともに、フレーム自体の外観性を高めて部品点数の削減及びコストダウンを図ることができるエンジン発電機を提供すること。

【構成】 発電機30のロータ軸40をエンジン21のクランク軸24に同軸で連結するとともに、該ロータ軸40のクランク軸24との連結部とは反対側の一端部を、ステータ42の一侧を支持するフレーム3によって軸支するエンジン発電機において、前記フレーム3を略碗状に成形してこれで前記ロータ軸40の端部を覆うとともに、該フレーム3の側面に発電機30内部を冷却する冷却風が通過する通気孔47を設け、該通気孔47に前記ロータ軸40のフレーム3への軸支部が臨むよう構成する。本発明によれば、ロータ軸40のフレーム3への嵌合状態は通気孔47を介して目視で確認することができ、又、フレーム3はそれ自体の外観が良好であるため、前記目的が達成される。



## 【特許請求の範囲】

【請求項 1】 発電機のロータ軸をエンジンのクランク軸に同軸で連結するとともに、該ロータ軸のクランク軸との連結部とは反対側の一端部を、ステータの一侧を支持するフレームによって軸支するエンジン発電機において、前記フレームを略碗状に成形してこれで前記ロータ軸の端部を覆うとともに、該フレームの側面に発電機内部を冷却する冷却風が通過するための通気孔を設け、該通気孔に前記ロータ軸のフレームへの軸支部が臨むよう構成したことを特徴とするエンジン発電機。

【請求項 2】 前記ロータ軸の前記フレームへの軸支部よりも内側に冷却ファンを設けたことを特徴とする請求項 1 記載のエンジン発電機。

## 【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、エンジンによって駆動されるポータブル発電機等のエンジン発電機に関する。

【0002】

【従来の技術】 ポータブル発電機等のエンジン発電機においては、例えば、発電機のロータ軸をエンジンのクランク軸に同軸で連結するとともに、該ロータ軸のクランク軸との連結部とは反対側の一端部を、ステータの一侧を支持するフレームによって軸支する構成が採用される。

【0003】

【発明が解決しようとする課題】 ところが、上記構成のエンジン発電機においては、発電機のロータ軸のフレーム軸支部への嵌合組付時にロータ軸の嵌合状態を外部から目視で確認することができず、組付作業性が悪いという問題があった。

【0004】 又、発電機のフレームはそれ自体がカバーを構成する程の外観を備えておらず、該フレームを覆う別のカバーが必要であったため、構成部品点数が増え、コストアップを招く原因となっていた。

【0005】 本発明は上記問題に鑑みてなされたもので、その目的とする処は、ロータ軸のフレームへの軸支部を目視で確認することによって高い組付作業性を確保するとともに、フレーム自体の外観性を高めてこれを覆うカバーを廃し、部品点数の削減及びコストダウンを図ることができるエンジン発電機を提供することにある。

【0006】

【課題を解決するための手段】 上記目的を達成するため、請求項 1 記載の発明は、発電機のロータ軸をエンジンのクランク軸に同軸で連結するとともに、該ロータ軸のクランク軸との連結部とは反対側の一端部を、ステータの一侧を支持するフレームによって軸支するエンジン発電機において、前記フレームを略碗状に成形してこれで前記ロータ軸の端部を覆うとともに、該フレームの側面に発電機内部を冷却する冷却風が通過するための通気孔を設け、該通気孔に前記ロータ軸のフレームへの軸支

部が臨むよう構成したことを特徴とする。

【0007】 又、請求項 2 記載の発明は、請求項 1 記載の発明において、前記ロータ軸の前記フレームへの軸支部よりも内側に冷却ファンを設けたことを特徴とする。

【0008】

【作用】 請求項 1 記載の発明によれば、ロータ軸のフレーム軸支部への嵌合状態はフレームに形成された通気孔から内部を目視することによって確認することができるため、ロータ軸のフレームへの組み付けを作業性良く行うことができる。又、ロータ軸の端部を覆うフレームはそれ自体の外観が良好であるため、該フレームを覆うための別のカバーが不要となり、部品点数の削減及びコストダウンを図ることができる。

【0009】 請求項 2 記載の発明によれば、冷却ファンはロータ軸のフレームへの軸支部よりも内側へ設けられるため、ロータ軸の軸支部が冷却ファンの外側へ突出し、従って、冷却ファンが通気孔からの目視を阻害することがなく、ロータ軸のフレーム軸支部への組付作業性が一段と高められる。

【0010】

【実施例】 以下に本発明の一実施例を添付図面に基づいて説明する。

【0011】 図 1 は本発明に係るエンジン発電機の正面図、図 2 は同エンジン発電機の平面図、図 3、図 4 はそれぞれ図 1 の矢視 A 方向、矢視 B 方向の図である。

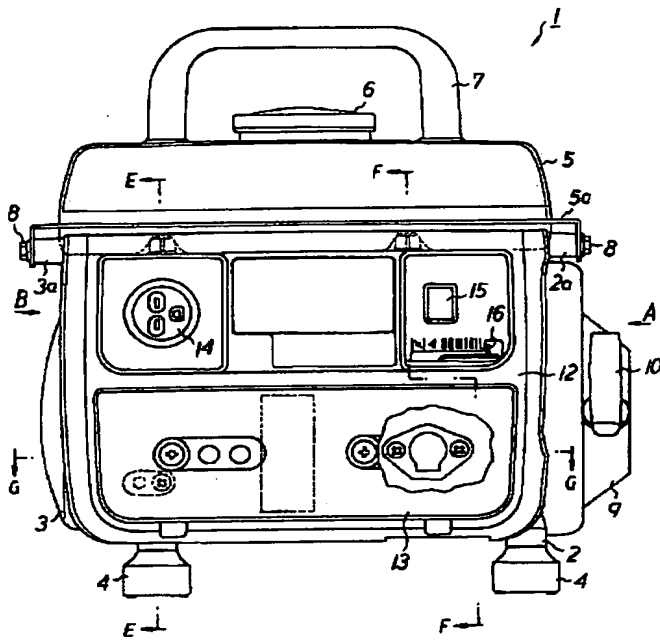
【0012】 先ず、本実施例に係るエンジン発電機 1 の全体構成を図 1 乃至図 4 に基づいて概説する。

【0013】 本実施例に係るエンジン発電機 1 は図 1 の右半分にエンジンを配し、左半分に発電機を配して構成され、エンジンのクランクケース 2 と発電機のフレーム 3 の底部に各々取り付けられた各 2 個のゴムマウント 4 を介して床面上に水平に設置される。

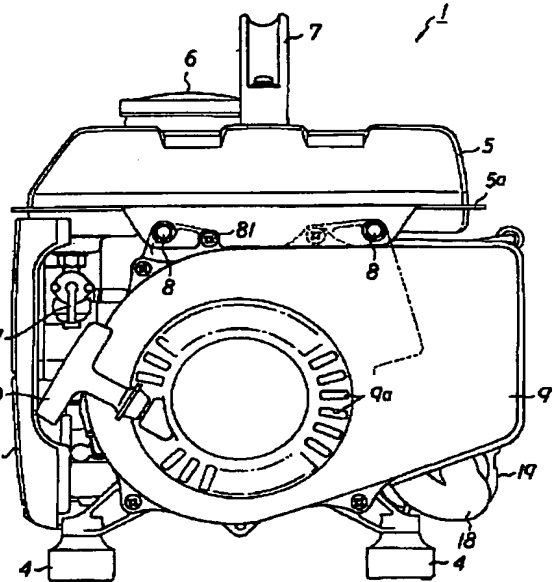
【0014】 又、当該エンジン発電機 1 の上部には燃料タンク 5 が配設されており、該燃料タンク 5 の上面にはタンクキャップ 6 が螺着されるとともに、持ち運び用の把手 7 が取り付けられている。この燃料タンク 5 は、図 1 に示すように、板金製の接合フランジ部 5 a の長手方向両端部の一部が下方へ直角に折り曲げられており、この部分に挿通する各 2 個のボルト 8 によって前記クランクケース 2 の上部とフレーム 3 の上部に各々突設されたボス部 2 a、3 a に取り付けられている。尚、上述のように燃料タンク 5 の接合フランジ部 5 a の一部を下方へ折り曲げることによってその部分の剛性が高められ、燃料タンク 5 をクランクケース 2 とフレーム 3 の上部に強固に取り付けることができる。

【0015】 更に、エンジン発電機 1 のエンジン側の側端部には、図 1 乃至図 3 に示すように、ファンカバー 9 が取り付けられており、該ファンカバー 9 からはエンジン始動用のリコイルスタータのハンドル 10 が露出している。

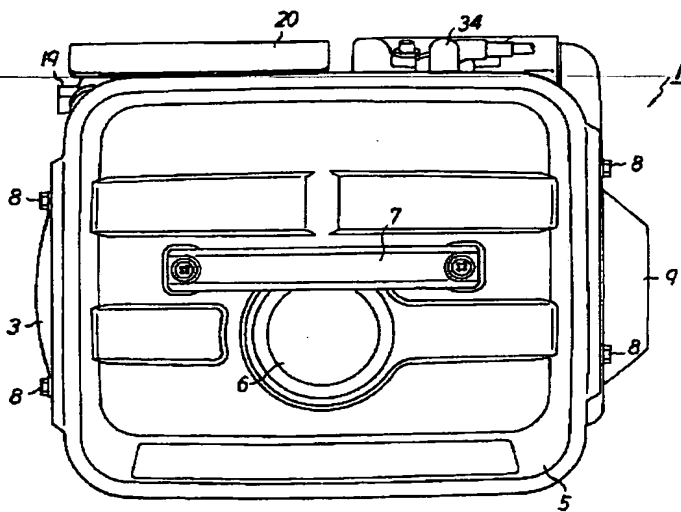
【図 1】



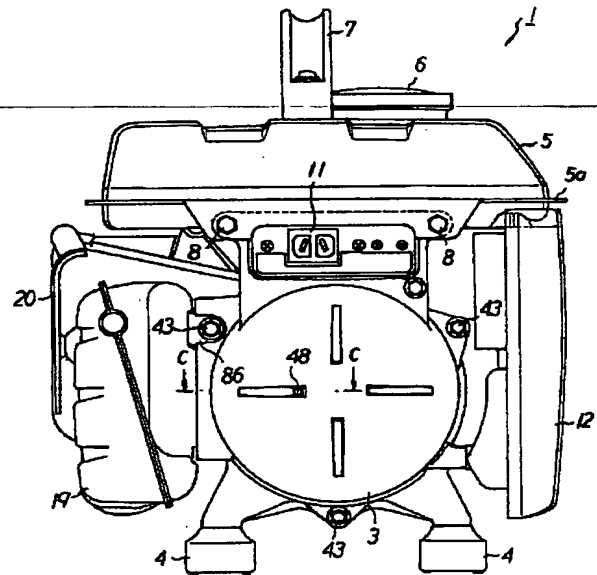
【図 3】



【図 2】

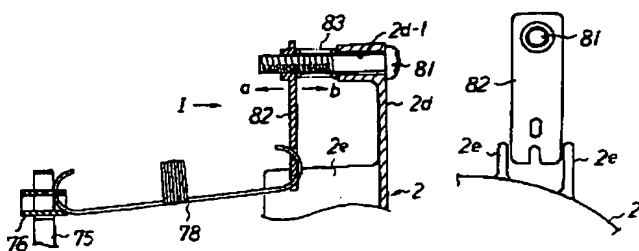


【図 4】



【図 19】

【図 20】





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 DETAILED DESCRIPTION
 

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[Detailed Description of the Invention]

1001]

[Industrial Application] This invention relates to engine generators, such as a portable generator driven with an engine.

1002]

[Description of the Prior Art] In engine generators, such as a portable generator, while connecting the rotor shaft of a generator with an engine crankshaft on the same axle, the configuration with which the connection section with the crankshaft of this rotor shaft supports the end section of the opposite side to revolve by the frame which supports the 1 side of a stator is adopted, for example.

1003]

[Problem(s) to be Solved by the Invention] However, in the engine generator of the above-mentioned configuration, the fitting condition of a rotor shaft could not be visually checked from the exterior at the time of with [ to the frame support section of the rotor shaft of a generator ] a fitting group, but there was a problem that workability with a group was bad.

1004] Moreover, the frame of a generator was not equipped with the appearance to the extent that itself constitutes covering, but since covering according to wrap was required, its component part mark increased its frame, and it had become the cause which causes a cost rise.

1005] The place which this invention was made in view of the above-mentioned problem, and is made into the purpose raises the appearance nature of the frame itself, abandons wrap covering for this, and is to offer the engine generator which can aim at reduction and a cost cut of components mark while it secures high workability with a group by checking the support section to the frame of a rotor shaft visually.

1006]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, invention according to claim 1 While connecting the rotor shaft of a generator with an engine crankshaft on the same axle In the engine generator which supports the end section of the opposite side to revolve by the frame which supports the 1 side of a stator, the connection section with the crankshaft of this rotor shaft is fabricated in the shape of \*\*\*\*, and comes out of said frame. The edge of said rotor shaft with a wrap An air hole for the cooling wind which cools the interior of a generator to pass is prepared in the side face of this frame, and it is characterized by constituting so that the support section to the frame of said rotor shaft may attend this air hole.

1007] Moreover, invention according to claim 2 is characterized by forming a cooling fan inside the support section to said frame of said rotor shaft in invention according to claim 1.

1008]

[Function] According to invention according to claim 1, since the fitting condition to the frame support section of a rotor shaft can be checked by viewing the interior from the air hole formed in the frame, it can perform attachment by the frame of a rotor shaft with sufficient workability. Moreover, in the edge of a rotor shaft, since a wrap frame has the good appearance of itself, another covering of a wrap sake becomes unnecessary about this frame, and reduction and a cost cut of components mark can be aimed at.

1009] According to invention according to claim 2, since a cooling fan is formed inside the support section of the frame of a rotor shaft, the support section of a rotor shaft checks a projection therefore to the outside of a cooling fan, a cooling fan does not check viewing from an air hole, and the workability with a group to the frame support section of a rotor shaft is raised much more.

1010]

[Example] One example of this invention is explained based on an accompanying drawing below.

1011] The top view of this engine generator, drawing 3 , and drawing 4 of the front view of the engine generator which drawing 1 requires for this invention, and drawing 2 are drawings of the direction of view A

drawing 1 , and the direction of view B, respectively.

012] First, the whole engine generator 1 configuration concerning this example is outlined based on drawing 1 thru/or drawing 4 .

013] The engine generator 1 concerning this example arranges an engine on the right half of drawing 1 , ranges a generator on a left half, is constituted, and is installed horizontally on a floor line through two bber mountings 4 each respectively attached in the pars basilaris ossis occipitalis of the engine crank case 2 and the frame 3 of a generator.

014] Moreover, while the fuel tank 5 is arranged in the upper part of the engine generator 1 concerned and the tank cap 6 is screwed on the top face of this fuel tank 5, the handle 7 for carrying is attached. A part of longitudinal direction both ends of junction flange 5a made from a sheet metal are bent by the right angle below, and this fuel tank 5 is attached in the boss sections 2a and 3a which protruded on the upper part of said crank case 2, and the upper part of a frame 3 respectively with two bolts 8 each inserted in this part, as shown in drawing 1 . In addition, by bending a part of junction flange 5a of a fuel tank 5 below as mentioned above, the rigidity of the part is raised and a fuel tank 5 can be firmly attached in the upper part of a crank case 2 and a frame 3.

015] Furthermore, as shown in drawing 1 thru/or drawing 3 , the fan cover 9 is attached and the handle 10 of the reverser starter for engine starting is exposed to the side edge section by the side of the engine of an engine generator 1 from this fan cover 9.

016] On the other hand, as shown in drawing 4 , said frame 3 has attended the side edge section by the side of the generator of an engine generator 1, and the plug socket 11 for DC12V is attached in the upper part of the side edge side of this frame 3.

017] Moreover, as shown in drawing 1 , the really fabricated case 12 is attached in the transverse-plane side of an engine generator 1 by resin, the bottom half section of this case 12 is covered with another covering 13 made of resin, and the plug socket 14 for AC220V, the starter switch 15, and the choke lever 16 are attached in right and left of the Johan section of this case 12, respectively. In addition, as shown in drawing 3 , the fuel cock 17 arranged inside said covering 13 has exposed to the end face by the side of the engine of an engine generator 1, and this fuel cock 17 is attached in the pars basilaris ossis occipitalis of a fuel tank 5.

018] Furthermore, the exhaust air muffler 19 (refer to drawing 4 ) connected to the exhaust pipe 18 (refer to drawing 3 ) and this exhaust pipe 18 which are derived from an engine is arranged in the rear-face side of an engine generator 1, and a part of exhaust air muffler 19 is covered with the muffler cover 20.

019] Next, the internal structure of the engine generator 1 concerned is explained based on drawing 5 thru/or drawing 10 . In addition, the C-C-line expanded sectional view of drawing 4 and drawing 10 of drawing 5 , the side elevation which the fracture front view of an engine generator, a fracture rear-face Fig., and drawing 7 removed the fracture top view of this engine generator for this engine generator, and, as for drawing 6 , drawing 8 removed the fan cover, respectively, and was seen from the engine side, and drawing 9 are the partial fracture top views by the side of the generator of this engine generator.

020] The engine 21 used for this example is a two-cycle engine, and as are shown in drawing 8 , and the cylinder 22 inclines in one side and is shown in drawing 7 , said crank case 2 carries out the junction of piece of division 2A carried out 2 \*\*\*\*s, and the 2B, and is constituted. in addition, a part of the piece of division 2A -- 2A-1 constitutes the frame of a generator, and as shown in drawing 5 and drawing 7 , two or more installation holes 23 of the cooling style are formed in the part.

021] As shown in drawing 7 , in the above-mentioned crank case 2, the crankshaft 24 is contained free rotation ], and taper fitting of the cooling fan 25 is carried out to the end of this crankshaft 24, and it is bound with the nut 26. And as shown in drawing 7 and drawing 8 , the forced draft air duct 27 of the letter of scrolling is formed in the periphery side of a cooling fan 25 of the end face and said fan cover 9 of a crank case 2, and end opening 28a (refer to drawing 7 and drawing 8 ) of the cylinder cover 28 made of wrap resin has faced this forced draft air duct 27 said cylinder 22. In addition, two or more installation hole of cooling style 9a is formed in the fan cover 9 at the radial. Moreover, as shown in drawing 8 , opening 28b is formed in the end lower part of cylinder cover 28, as shown in drawing 7 , opening 28c is formed in the other end of cylinder cover 28, and a part of fan cover 9 (part which gave the slash to drawing 8 ) protrudes to the way outside cylinder cover 28.

022] by the way, it is shown in drawing 6 and drawing 8 -- as -- the cylinder of piece of division 2A of a crank case 2, and 2B -- the plate-like long \*\* walls 29A and 29B of the \*\* style are formed in the die-length direction (longitudinal direction of drawing 6 ) which inclined in the lower part 22 side (rear-face side) at the wanting lower part at one.

023] On the other hand, as shown in drawing 7 and drawing 8 , two exhaust ports 31 of the cooling style

the shape of a long hole which carries out opening are formed in said forced draft air duct 27 at flange 2b formed in the end periphery of a crank case 2.

1024] As it \*\* and is shown in drawing 6 , the exhaust pipe 18 is drawing from the cylinder 22 side of an engine 21, this exhaust pipe 18 is prolonged along with this in said upper part of the \*\* walls 29A and 29B of the \*\* style which was bent by the abbreviation right angle to the generator 30 side (method of the right of drawing 6 ), and was formed in the lower part of a crank case 2 after extending from a cylinder 22 to a lower part, and said exhaust air muffler 19 is connected to the edge.

1025] Moreover, the carburetor 32 is arranged in the opposite side (under drawing 7 ) in the cylinder 22 of an engine 21. In addition, in drawing 7 , 33 is an ignition coil and 34 is an ignition plug.

1026] By the way, in this example, although two holes 35 for fan removal carry out phase opposite and are formed in said cooling fan 25 as shown in drawing 8 , removal of a cooling fan 25 is performed in the way shown in drawing 11 and drawing 12 .

1027] That is, the sectional view in which drawing 11 shows the removal point of a cooling fan 25, and drawing 12 are D-D line sectional views of drawing 11 , and in order to remove a cooling fan 25 from a crankshaft 24, the fixture 36 of the dedication shown in drawing 11 is used. This fixture 36 consists of nut 3a screwed in a plate 37, one bolt 38 screwed in the core of this plate 37, two bolts 39 inserted in circular hole 37a formed in the both ends of this plate 37, and each bolts 39.

1028] In \*(ing) and removing a cooling fan 25 from a crankshaft 24 After loosening a nut 26 (refer to drawing 7 ) and removing this, as the chain line shows the head of said two bolts 39 to major diameter 35a of said hole 35 for removal formed in the cooling fan 25 at drawing 12 , first, through, Next, the shank is made to engage with narrow diameter portion 35b of each hole 35 for removal to drawing 12 , as a bolt 39 moved to the method of the inside of the direction of a path and a continuous line shows. Then, since the head contacts a cooling fan 25, as for a bolt 39, the omission is prevented.

1029] Next, if this bolt 38 is rotated in the condition of having made the end of the bolt 38 screwed in the core of a plate 37 contacting the end face of a crankshaft 24, in order that a plate 37 may move to the method of outside (method of the right of drawing 11 ) along with a bolt 38 and may lengthen a cooling fan 25 by the strong force in this direction through two bolts 39, taper fitting with a crankshaft 24 is canceled and a cooling fan 25 is easily removed from a crankshaft 24.

1030] Next, the configuration of a generator 30 is explained.

1031] The rotor shaft 40 connected with the crankshaft 24 of an engine 21 on this and the same axle as the generator 30 concerning this example was shown in drawing 5 , It is constituted including the stator 42 made fixed to the periphery side of Rota 41 bound to the periphery of this rotor shaft 40, and this Rota 41. ~~These are contained in the space constituted by the frame 3 of piece of division 2A of a crank case 2 really~~ fabricated 2A-1 and in the shape of \*\*\*\* in part. a part of piece of division 2A -- 2A-1 and a frame 3 are connected in one with three bolts 43 on both sides of said stator 42 in between. in addition -- this example -- a crank case 2 -- piece of division 2A, and 2B -- 2 -- dividing -- a part of one piece of division 2A -- although 2A-1 was constituted as a part of frame of a generator 30, a crank case and the frame of a generator 30 may be completely constituted on another object.

1032] By the way, as shown in drawing 5 , taper fitting of the end is carried out to the edge of a crankshaft 24, and said rotor shaft 40 is connected with the crankshaft 24 with the long bolt 44 inserted in the shaft center of this. And while the edge (the connection section with a crankshaft 24 is an edge of the opposite side) of this rotor shaft 40 is covered with said frame 3, it is supported to revolve by the frame 3 free rotation ] through the ball bearing 45, and the cooling fan 46 is bound inside the support section to the frame 3 of this rotor shaft 40.

1033] Moreover, as shown in drawing 5 , two or more air holes 47 to discharge the cooling wind which flows the interior of a generator 30 are formed in the side face of the frame 3 fabricated in the shape of \*\*\*\*. Moreover, as shown in drawing 4 , the small rectangle hole 48 is formed in the end face of a frame 3. In addition, when an air hole 47 turns into an introductory hole of the cooling style, a cooling fan 46 is attached to a connection section side with the crankshaft 24 of a rotor shaft 40.

1034] By the way, in this example, said ball bearing 45 which supports the end of a rotor shaft 40 is pressed fit in a rotor shaft 40, and the pin 49 for baffles protrudes on the periphery of this ball bearing 45. In addition, a ball bearing 45 may be pressed fit in a frame 3 side, and fitting of the rotor shaft 40 may be carried out to this ball bearing 45.

1035] Although it is necessary to carry out fitting of said pin 49 to engagement slot 3b (to refer to drawing 10 ) formed in the frame 3 as shown in drawing 10 when \*(ing) and carrying out fitting of the ball bearing 45 to a frame 3 on the occasion of attachment by the frame 3 of a rotor shaft 40 Since the physical relationship of a pin 49 and engagement slot 3b can view and check the interior from the air hole 47 formed in the frame

it can perform attachment by the frame 3 of a rotor shaft 40 with sufficient workability. In this case, since the cooling fan 46 is attached inside the support section to the frame 3 of a rotor shaft 40, the support section of a rotor shaft 40 checks a projection therefore to the outside of a cooling fan 46, and a cooling fan 46 does not check viewing from an air hole 47. In addition, in the condition that attachment of a rotor shaft 40 was completed and fitting of the ball bearing 45 was carried out to the frame 3, existence of a pin 49 can be checked from said rectangle hole 48 (refer to drawing 4 ) formed in the end face of a frame 3.

[036] Moreover, in the edge of a rotor shaft 40, since the wrap frame 3 has the good appearance of itself, another covering of a wrap sake becomes unnecessary about this frame 3, and reduction and a cost cut of components mark can be aimed at.

[037] By the way, in this example, as shown in drawing 10 , said plug socket 11 for DC12V is attached in the upper part of the frame 3 of a generator 30. In addition, in drawing 10 , 50 is a breaker and 51 is a rectifier.

[038] Next, the configuration and attachment structure of said case 12 made of resin are explained based on drawing 13 thru/or drawing 17 . In addition, the partial front view and drawing 17 which show the condition that F-F line sectional view of drawing 1 and drawing 15 removed G-G string sectional view of drawing 1 , and, as for drawing 13 , drawing 16 removed covering of the case lower part, as for E-E-lines sectional view of drawing 1 and drawing 14 are the plane section Fig. of a case.

[039] The side (rear-face side) to which the cylinder 22 of an engine 21 is allotted is matched for the opposite side (front-face side) with the case 12 made of resin, and this is really fabricated including air cleaner case 12A located in the bottom half section, and base 12B for electronic-autoparts wearing located in the Johan section.

[040] It \*\*, said air cleaner case 12A which constitutes the bottom half section of a case 12 has cube type-like section 12a which carries out opening to a front-face side, and as shown in drawing 15 and drawing 16 , while the inhalation-of-air box 52, the boss sections 53 and 54 for screw stops, and the rib 55 of the rectangle in which a front face carries out opening are formed in one, the opening 56 which is open for free passage in said carburetor 32 is formed in the base of this cube type-like section 12a. And cube type-like section 12a of this air cleaner case 12A is covered with said covering 13 of the product [ opening / that / front ] made of resin.

[041] The boss section 58 of two inhalation-of-air nozzles [ 57 or 2 ] and a shield 59 protrude on the above-mentioned covering 13 at the rear face at one. This covering 13 Where fitting of the perimeter is carried out to slot 12a-1 formed in the perimeter of cube type-like section 12a of air cleaner case 12A By screwing the screw 60 inserted in the boss section 58 on the nut 61 embedded in the boss section 58 by the side of air cleaner case 12A, it is attached in air cleaner case 12A, and is a wrap about front opening of cube type-like section 12A. In addition, in the condition that covering 13 was attached, as shown in drawing 15 , opening of said two inhalation-of-air nozzles 57 is carried out into said inhalation-of-air box 52 formed in the air cleaner case 12A side, and the air filter 62 inserted in between said ribs 55 formed at the air cleaner case 12A side is \*\*\*\*(ed) with the base and covering 13 of air cleaner case 12A (cube type-like section 12a).

[042] On the other hand, cube type-like section 12b which carries out opening is formed in one, and the rear-face side (inside) is equipped with electronic autoparts, such as said plug socket 14 (refer to drawing 13 ) for AC220V, a capacitor 63 (refer to drawing 17 ), the CDI unit 64 (refer to drawing 14 and drawing 17 ), and a coupler 65 (refer to drawing 17 ), at this cube type-like section 12b at said base 12 for electronic-autoparts wearing B which constitutes the Johan section of the case 12 made of resin. In addition, as shown in drawing 13 , rear-face side opening of cube type-like section 12b is covered with the covering 67 made from a sheet metal. Moreover, as shown in drawing 14 , slit 12c for said choke lever 16 to penetrate is formed in base 12 for electronic-autoparts wearing B of a case 12, the choke lever 16 penetrated this slit 12c, and that control unit has exposed it out of a case 12.

[043] By the way, in this example, the lead wire which is not illustrated [ around which the stator 42 of a generator 30 was looped ] is extended as it is, direct continuation is carried out to said capacitor 63 and coupler 65, and a cost cut can be aimed at to the conventional structure where the separate lead was made to intervene among these.

[044] It \*\*, and while screw stop immobilization of the lower part is carried out on one screw 68 at the frame 3 of a generator 30, screw stop immobilization of the case 12 made of resin concerned is carried out with two bolts 69 at the inlet manifold 70 (refer to drawing 14 ) of an engine 21. Namely, screw stop immobilization of the bottom half section of a case 12 is carried out at a frame 3 by screwing the screw 68 inserted in said boss section 54 on boss section 3c (referring to drawing 13 ) which protruded on the flank of the frame 3 of a generator 30. As shown in drawing 14 thru/or drawing 16 , screw stop immobilization is

carried out with the carburetor 32 at the inlet manifold 70 (refer to drawing 14 ) with said two bolts 69 inserted in the flange 71, the case 12 concerned, and the carburetor 32. In addition, as shown in drawing 5 and drawing 16 , opening 71a is formed in the flange 71.

[045] On the other hand, as shown in drawing 13 , the Johan section of a case 12 is being fixed by making engagement heights 72 which protruded on the top face of said cube type-like section 12b engage with engagement crevice 5b formed in the base of said fuel tank 5. The engagement heights 72 formed in a case 12 side are constituted by cross-joint-like rib 72a which has the slant surface part of a taper toward the upper part, engagement crevice 5b formed in the base of a fuel tank 5 has the slant surface part which goes caudad and spreads, and both slant surface parts are carrying out field contact mutually in the condition that engagement crevice 5b is engaging with the engagement heights 72.

[046] If it \*\* and an engine 21 drives, the inhalation-of-air negative pressure generated in this engine 21 will lengthen, and inhalation of air will be attracted in a case 12 through two inhalation-of-air nozzles 57 of covering 13. This inhalation of air flows in in the inhalation-of-air box 52, and collide and it rebounds upon the base. After flowing out out of the inhalation-of-air box 52 through between the inhalation-of-air box 52 and the inhalation-of-air nozzles 57, An air filter 62 is passed, and it is purified, and flows in a carburetor 32 from a flange 71 and the openings 71a and 56 of a case 12 over a shield 59, and formation of the gaseous mixture in a carburetor 32 is presented. In this case, since the new mind which flows in a case 12 from the inhalation-of-air nozzle 57 is introduced in the inhalation-of-air box 52, while an inhalation-of-air sound is reduced, invasion of big dust is prevented. Moreover, the inflow by the side of the carburetor 32 of the dust to which the inhalation-of-air sound decreased and invaded also with the shield 59 is prevented.

[047] It \*\*, and in this example, since screw stop immobilization only of the lower part is carried out at the frame 3 of a generator 30, the screw stop part is reduced, a man day with a group becomes fewer, and, as for the case 12 made of resin, improvement and a cost cut of assemblability are achieved. Moreover, in order not to carry out screw stop immobilization of the upper part of the case 12 made of resin but to engage with a fuel tank 5, this case 12 made of resin is rich in flexibility as a whole, and a poor precision at the time of with [ the ] a group is absorbed by deformation of the case 12 concerned.

[048] Moreover, since concavo-convex engagement of the upper part of the case 12 made of resin is carried out with a slant surface part to a fuel tank 5, even if it is not based on a screw stop means, this case 12 made of resin is certainly fixed, without producing BIBIRI.

[049] Furthermore, since the screw 68 which fixes the lower part of a case 12 is covered with covering 13 according to this example, this screw 68 is not outside exposed and the appearance nature of the engine generator 1 concerned is raised. Moreover, since screw stop immobilization of the base of the cube type-like section 12a is carried out at a frame 3, as shown in drawing 13 , a screw 68 can approach a frame 3, therefore a case 12 can stop short the wire extension of boss section 3c by the side of a frame 3.

[050] In addition, according to this example, since cube type-like section 12b is formed in the upper part of case 12, the rigidity of the part is raised, and it is hard to transform the front-face side of the case 12 upper part at the time of with a group, therefore the front face of the case 12 upper part can be used as a direct design side.

[051] By the way, although the adjustment device 74 of the centrifugal-spark-advancer style 73 and this centrifugal-spark-advancer style 73 shown in the two-cycle engine 21 concerning this example at drawing 3 is established, those configurations are explained based on drawing 18 thru/or drawing 20 below. In addition, the H-H line sectional view of drawing 18 and drawing 20 of the top view in which drawing 18 shows a centrifugal-spark-advancer style and its adjustment device, and drawing 19 are the I-I line sectional views of drawing 19 .

[052] the centrifugal-spark-advancer style 73 -- irrespective of a load -- the rotational frequency of an engine 21 -- abbreviation -- it is the device kept constant and is constituted including the centrifugal-spark-advancer shaft 75 rotated according to an engine speed according to the device in which it does not illustrate [ which was incorporated in the crank case 2 ], the governor arm 76 with which the end was bound, this centrifugal-spark-advancer shaft 75, the link 77 connected with the other end of this governor arm 76, and the tension spring 78 with which the end was connected with the pars intermedia of a governor arm 76.

[053] By the way, in drawing 18 , 79 is the rotation shaft of a non-illustrated throttle valve prepared in the carburetor 32, and the pars intermedia of the throttle arm 80 is bound to this rotation shaft 79. And the other end of said link 77 is connected with the end of this throttle arm 80, and the throttle arm 80 and the governor arm 76 are mutually connected through the link 77.

[054] On the other hand, the governor adjustment device 74 is formed in the upper part of a crank case 2. This governor adjustment device 74 by adjusting the initialization load of said tension spring 78 2d of

supporters which are the device in which the engine speed which should be kept constant is adjusted, and were formed in the upper part of a crank case 2 at one, The stretching screw 81 inserted in through tube 2d-1 formed in 2d of these supporters, It is constituted including the thrust plate 82 screwed in this stretching screw 81 free [ an attitude ], this thrust plate 82, the compression spring 83 \*\*\*\*(ed) between 2d of supporters, and baffle section 2e of a thrust plate 82. In addition, baffle section 2e is constituted by the wall of two sheets each other parallel really fabricated by the crank case 2, and the direction of through tube 2d-1 formed in these baffle section 2e and 2d of said supporters is made into the direction of mold omission at the time of casting of a crank case 2 (longitudinal direction of drawing 18 ).

0055] And the end of said tension spring 78 is hung on the lower limit section of said thrust plate 82, and the other end of a tension spring 78 is hung on one of the three circular holes 76a, 76b, and 76c formed in said governor arm 76 (this example central circular hole 76b).

0056] \*(ing), in drawing 18 , it rotates clockwise with increase of an engine speed, and the centrifugal-spark-advancer shaft 75 makes a governor arm 76 drawing 18 show a condition in case a non-illustrated throttle valve is full open, and rotate in this direction (the direction of an illustration continuous-line arrow head).

0057] Here, an operation of the centrifugal-spark-advancer style 73 and its adjustment device 74 is explained.

0058] For example, since there is little power used, if an engine load is small, therefore the governor arm 76 which the engine speed went up and was bound to the centrifugal-spark-advancer shaft 75 and this as mentioned above rotates in the direction of a continuous-line arrow head of drawing 18 The tensile force of a tension spring 78 becomes large, and a governor arm 76 stands it still in the location where the rotation force of a governor arm 76 and the tensile force of a tension spring 78 balance. Since a throttle valve is maintained at the opening of the condition through a link 77 and the throttle arm 80, an engine speed is maintained at abbreviation regularity.

0059] Moreover, since power consumption increased, if engine loads also increase in number and an engine speed falls gradually according to this, since it will be adjusted in the direction in which a governor arm 76 is made to rotate by the direction of a broken-line arrow head, and the opening of a throttle valve becomes large with the tensile force of a tension spring 78, an engine speed goes up. And if a governor arm 76 rotates in the direction of a continuous-line arrow head of drawing 18 by the rise of an engine speed, the tensile force of a tension spring 78 increases, and in order that a governor arm 76 may stand it still in the location where the rotation force of a governor arm 76 and the tensile force of a tension spring 78 balance, an engine speed will be kept being the same as that of the above-mentioned to abbreviation regularity.

0060] Although an engine speed is kept above to abbreviation regularity irrespective of a load, adjustment of the engine speed which should be kept constant is easily made by adjusting the die length of a tension spring 78 and changing the initialization load (tensile force) according to the governor adjustment device 74.

0061] That is, if a stretching screw 81 is turned using a non-illustrated driver, in order that the thrust plate 82 screwed in this stretching screw 81 may move in the arrow head a or the direction of b of drawing 19 , the initialization load of a tension spring 78 changes and the engine speed which should be kept constant by this is adjusted. It is adjusted in the direction in which the engine speed which the initialization load of a tension spring 78 should become large if it is adjusted in the direction in which the engine speed which the initialization load of a tension spring 78 should become small if a thrust plate 82 is specifically moved in the direction of arrow-head [ of drawing 19 ] a, and should be kept constant becomes low and a thrust plate 82 conversely moved in the direction of arrow-head [ of drawing 19 ] b, and should be kept constant becomes high.

0062] It \*\*, and since baffle section 2e of 2d of supporters of a stretching screw 81 and a thrust plate 82 was formed in the crank case 2 in the governor adjustment device 74 concerning this example at one, components mark are reduced and cost cut, improvement in assembliability, etc. are achieved. Moreover, since the stretching screw 81 is exposed outside and other components are not close to the surroundings of it, it can adjust with sufficient workability.

0063] Furthermore, the direction of through tube 2d-1 and baffle section 2e of 2d of supporters really fabricated by the crank case 2 is written as the direction of mold omission at the time of casting of a crank case 2, and cutting becomes unnecessary.

0064] In addition, it may be made to perform the baffle of this thrust plate 82 by making slot 82a which formed in one baffle section 2e constituted from a wall of one sheet by the crank case 2 as shown in drawing 21 , and was formed in the lower limit of a thrust plate 82 at this baffle section 2e engaged.



0065] Next, the structure of said exhaust air muffler 19 is explained based on drawing 22 thru/or drawing 7. In addition, the side elevation in which the side elevation of an exhaust air muffler and drawing 23 show drawing of the direction of view J of drawing 22 and drawing 24 ] the structure of the 1st expansion interior of a room of this exhaust air muffler as for drawing 22, drawing 25, drawing 26, and drawing 27 are the K-K line of drawing 24, a L-L line, and a M-M line sectional view, respectively.

0066] The exhaust air muffler 19 concerning this example joins the outside cases 84A and 84B acquired by carrying out press forming of the sheet metal, and is constituted, and as shown in drawing 25, the interior is divided by the 1st expansion chamber S1 and the 2nd expansion chamber S2 by the septa 85A and 85B of two sheets by which junction unification was carried out. In addition, as shown in drawing 7, the exhaust air muffler 19 is supported by said frame 3 with said bolt 43 inserted in the bracket 86 bound to the rear face (outside case 84A).

0067] As shown in drawing 25, the exhaust air inlet 87 is carrying out opening to the 1st expansion chamber S1 of the above, and as shown in drawing 22 and drawing 23, the flange 88 bound to the end of said exhaust pipe 18 is bound with the bolt 90 to the part in which the exhaust air inlet 87 of outside case 4B carries out opening through the gasket 89. Therefore, the exhaust pipe 18 is open for free passage to the 1st expansion chamber S1 of the exhaust air muffler 19 through the exhaust air inlet 87. In addition, the other end of an exhaust pipe 18 is attached in the cylinder 22 (refer to drawing 8) of the two-cycle engine 1 with two bolts 92 inserted in the flange 91 bound to this, as shown in drawing 6.

0068] By the way, as shown in drawing 24 thru/or drawing 27, the pipe-like free passage way 93 and flueway 94 of a size different diameter are formed in the joint of said septa 85A and 85B of two sheets, the end of the free passage way 93 is open for free passage to the 1st expansion chamber S1 through inlet-port 93a, and the other end is open for free passage to the 2nd expansion chamber S2 through outlet 93b. Moreover, as shown in drawing 27, the end of a flueway 94 is open for free passage to the 2nd expansion chamber S2 through inlet-port 94a, and opening of the other end is carried out into atmospheric air as opening 94b.

0069] It \*\*, and the exhaust gas discharged from the two-cycle engine 21 is led to the exhaust air muffler 19 through an exhaust pipe 18, is introduced into the 1st expansion chamber S1 from the exhaust air inlet 87, and as an arrow head shows to drawing 26, it flows into the 2nd expansion chamber S2 from outlet 93b through the inside of the free passage way 93 from inlet-port 93a of the free passage way 93. And the exhaust gas which flowed into the 2nd expansion chamber S2 is discharged in atmospheric air from opening 94b through the inside of a flueway 94 from inlet-port 94a of a flueway 94, as shown in drawing 7.

0070] By the way, in this example, as shown in drawing 24, inlet-port 93a and outlet 93b which carry out opening to the both ends of said exhaust air inlet 87 and free passage way 93, and this free passage way 93 are arranged at the abbreviation straight-line target, and the exhaust air muffler 19 concerned can be completely cleaned by taking this configuration.

0071] Here, the cleaning point of the exhaust air muffler 19 is explained.

0072] In order to clean the exhaust air muffler 19, while loosening first two bolts 92 shown in drawing 6 and removing these, the exhaust air muffler 19 is removed by loosening the bolt 43 shown in drawing 7, and removing this with the condition (condition shown in drawing 22 and drawing 23) that the exhaust pipe 18 is bound to this.

0073] Next, the bolt 90 shown in drawing 22 and drawing 23 is removed, and an exhaust pipe 18 is removed from the exhaust air muffler 19. Then, since inlet-port 93a and outlet 93b which the exhaust air inlet 87 carries out [ b ] opening to the exhaust air muffler 19, and carry out opening to the both ends of this exhaust air inlet 87, the free passage way 93, and this free passage way 93 as mentioned above are arranged at the abbreviation straight-line target, The carbon which inserted the abbreviation straight-line-like rod in the exhaust air muffler 19 from the exhaust air inlet 87, and adhered to the wall of the circumference of inlet-port 93a of the free passage way 93 and outlet 93b and the free passage way 93 with this rod is removable. Moreover, the carbon which adhered around the wall of the flueway 94 of the exhaust air muffler 19 and its inlet-port 94a is removed by similarly inserting an abbreviation straight-line-like rod from atmospheric-air opening edge 94b of a flueway 94.

0074] As mentioned above, in this example, since an abbreviation straight-line-like rod can be inserted from atmospheric-air opening edge 94b of the exhaust air inlet 87 and a flueway 94 and the inside of the exhaust air muffler 19 can be cleaned completely, it is not necessary to form the lid for cleaning in the exhaust air muffler 19, and the structure simplification and cost cut of the exhaust air muffler 19 can be aimed at.

0075] Moreover, since the exhaust pipe 19 is independently dismountable, this exhaust pipe 19 can be

ent freely and the design degree of freedom is not spoiled.

[076] Furthermore, it sets to the exhaust air muffler 19 concerning this example. Since the septa 85A and 85B of two sheets were put among the outside coverings 84A and 84B and the free passage way 93 and the flueway 94 were formed among both the septa 85A and 85B, Said configuration (configuration which comprises inlet-port 93a which carries out opening to the both ends of the exhaust air inlet 87, the free passage way 93, and this free passage way 93, and outlet 93b in the shape of an abbreviation straight line) can be obtained cheaply.

[077] Next, the attachment structure of said rubber mounting 4 in the engine generator 1 concerned is explained based on drawing 28 thru/or drawing 30. In addition, drawing 28 is a bottom view in which the expanded sectional view of the rubber mounting attachment section and drawing 29 show this bottom view, and drawing 30 shows the modification of a support projection.

[078] In this example, as shown in drawing 28, the support projection 95 (only one side is illustrated) protrudes on the lower both-sides section of a crank case 2 at one, and this support projection 95 consists of flange 95b formed in the lower limit of cylinder-like shank 95a and this shank 95a. As shown in drawing 28, flange 95b is fabricated in the shape of abbreviation lemon, this has width-of-face Hirobe 95b-2 of larger width of face than narrow section 95b-1 and that of the width of face near the outer-diameter dimension of shank 95a, and both are maintaining the physical relationship which carries out an abbreviation rectangular cross.

[079] On the other hand, the rubber mounting 4 is fabricated with rubber approximately cylindrical, minor diameter pore 4a which shank 95a of said support projection 95 should carry out fitting is formed in the center-section upper case, and major-diameter pore 4b by which flange 95b of this support projection 95 could be contained is formed in the bottom half section. Moreover, four heights 4c protrudes on the inferior surface of tongue of this rubber mounting 4 in the equiangular pitch at one.

[080] It is inserted in the support projection 95 by the side of a crank case 2 / the elastic deformation in this example.

[081] Namely, in order to insert the rubber mounting 4 in the support projection 95 If this is pushed in upwards, hooking minor diameter pore 4a of the top face of the rubber mounting 4 on the acute section (road section 95 corner of b-2) of flange 95b of the support projection 95, and twisting this rubber mounting 4 a little If flange 95b of the support projection 95 fits into minor diameter pore 4a of the rubber mounting 4 and pushes in the rubber mounting 4 upwards further in this condition by the elastic deformation of the rubber mounting 4 As flange 95b of the support projection 95 passes minor diameter pore 4a of the rubber mounting 4 and it is shown in drawing 28, major-diameter pore 4b is attended. Then, shank 95a of the support projection 95 fits into minor diameter pore 4a of the rubber mounting 4, insertion by the support projection 95 of the rubber mounting 4 is completed, and if it does in this way and the rubber mounting 4 is inserted in the support projection 95, the omission from the support projection 95 of this rubber mounting 4 will be prevented by width-of-face Hirobe 95b-2 of flange 95b. In addition, since two or more heights 4c is formed in the inferior surface of tongue of the rubber mounting 4 as mentioned above, when the engine generator 1 concerned is installed on a flat floor line, the rubber mounting 4 acts as a sucker and does not start balking from the floor line of an engine generator.

[082] by the way, as a configuration of flange 95b of the support projection 95 which protrudes on a crank case 2 at one When inserting the rubber mounting 4 in this, this rubber mounting 4 tends to be caught. Since the rubber mounting 4 is inserted in the support projection 95, the special configuration by which URA \*\*\*\* formation is carried out in the ellipse shown in drawing 30 (a) besides the configuration shown in drawing 29 and (b) that what is necessary is just that from which this cannot escape easily, and two semicycles shown in drawing 30 (c) is employable.

[083] As mentioned above, in this example, the support projection 95 is formed in a crank case 2 at one, since the configuration which inserts the rubber mounting 4 in this support projection 95 directly using that elastic deformation was adopted, the attachment structure of this rubber mounting 4 is simplified, and reduction of components mark, a cost cut, etc. can be aimed at.

[084] In addition, although the above explained the attachment structure of the rubber mounting 4 to the support projection 95 which protruded on the crank case 2, the same support projection (not shown) also as the lower both sides of the frame 3 of a generator 30 protrudes on one, and the same rubber mounting 4 so as this support projection is inserted in similarly, and is attached.

[085] Next, an operation of this engine generator 1 is explained.

[086] In order to drive the engine generator 1 concerned, the starter switch 15 shown in drawing 1 is turned on first, then the handle 10 of a reverser starter is lengthened, and the two-cycle engine 21 is started. In addition, at this time, a choke lever 16 is operated if needed and the choke valve of a carburetor



2 is set as suitable opening.

0087] If it \*\*, an engine 21 is started and a crankshaft 24 rotates, when Rota 41 bound to the rotor shaft 40 and this rotor shaft 40 of the generator 30 connected on this crankshaft 24 and the same axle rotates to a crankshaft 24 and one and Rota 41 rotates to a stator 42, induction of the electromotive force will be carried out and a necessary generation of electrical energy will be made. And the power generated with a generator 30 is outputted and consumed through the electric code which is not illustrated [ which was connected to the plug socket 14 (refer to drawing 1 ) for AC220V, or the plug socket 11 (refer to drawing 4 ) or DC12V ]. in addition -- irrespective of fluctuation of power consumption, i.e., fluctuation of a load, -- the engine speed of the two-cycle engine 21 -- said centrifugal-spark-advancer style 73 (refer to drawing 18 ) -- abbreviation -- it is kept constant.

0088] By the way, said cooling fan 25 (refer to drawing 7 ) bound to the edge of this crankshaft 24 also rotates to one by rotation of a crankshaft 24, and a cooling wind (open air) is introduced by rotation of this cooling fan 25 in a fan cover 9 from installation hole of cooling style 9a (refer to drawing 7 ) of a fan cover 9. and the cooling wind introduced in the fan cover 9 To drawing 8 , as an arrow head shows, flow the forced draft air duct 27 of the letter of scrolling, and the most flows in cylinder cover 28 from opening 28a of cylinder cover 28, as an arrow head shows to drawing 7 . The part cools the cylinder 22 of the two-cycle engine 21, and other cooling winds flow out of opening 28b which carries out opening to the end lower part of cylinder cover 28 as an arrow head shows to drawing 6 outside. In accordance with said \*\* walls 29A and 29B of the \*\* style formed in the crank case 2, it flows in the direction of an illustration arrow head, and an exhaust pipe 18 and the exhaust air muffler 19 are cooled. In addition, the \*\* walls 29A and 29B of the \*\* style function also as a heat insulation plate which intercepts the propagation to the floor line of the heat from an engine 21 at the same time they achieve the function to draw a cooling wind.

0089] Moreover, as an arrow head shows to drawing 7 , after the cooling wind which flowed the perimeter of the cylinder 22 in cylinder cover 28, and cooled this cylinder 22 flows out of opening 28c of cylinder cover 28, it flows the perimeter of the exhaust air muffler 19, and cools this exhaust air muffler 19.

0090] On the other hand, other flowing parts of the cooling style said forced draft air duct 27 Said exhaust port 31 (refer to drawing 7 and drawing 8 ) of the cooling style formed in flange 2b of a crank case 2 is passed. The part cools the electronic autoparts of the capacitor 63 which flows the inside of the case 12 made of resin, and is contained there, and CDI unit 64 grade. The cooling wind absorbed from between the remaining cooling winds and a fan cover 9, and cases 12 As an arrow head shows to drawing 7 , it is introduced into the interior of a generator 30 from the exhaust port 31 of the cooling style which carries out opening in two or more installation holes 23 of the cooling style with which it was formed in division piece A-1 of a crank case 2, and a forced draft air duct 27, and cooling in a generator 30 is presented. In

addition, the cooling fan 46 (refer to drawing 5 ) bound to the rotor shaft 40 of a generator 30 also rotates with a rotor shaft 40, and this cooling fan 46 discharges compulsorily the cooling wind which acted as a fan and cooling in a generator 30 let pass to the exterior from the air hole 47 (refer to drawing 5 ) formed in the same 3. Moreover, the installation hole 23 of the cooling style and the exhaust port 31 of the cooling style are formed in the side (low temperature side) on which a capacitor 63 and the electronic autoparts of CDI unit 64 grade are arranged.

0091] As mentioned above, the cylinder 22 of the two-cycle engine 21 is made to incline in one side in this example. Allot the exhaust pipe 18 and the exhaust air muffler 19 which are elevated-temperature components in the direction, and it arranges an air cleaner 62, a carburetor 32, the inhalation-of-air system components of fuel cock 17 grade, and the electronic autoparts of a capacitor 63 and CDI unit 64 grade to the opposite side. The cooling wind introduced in a fan cover 9 is divided into two by the side of an elevated temperature and low temperature. The engine 21 by the side of an elevated temperature, an exhaust pipe 18, and the inhalation-of-air system components by the side of the exhaust air muffler 19 and low temperature. Since electronic autoparts and a generator 30 are supplied separately, respectively and these were cooled, The deployment of the cooling style is achieved, even if it does not form a thermal insulation plate etc., the hot blast by the side of an engine 21 does not flow to an inhalation-of-air system components or electronic autoparts, or generator 30 side, and inhalation-of-air system components, electronic autoparts, and a generator 30 are certainly cooled by the low cooling wind of temperature. [ by the side of low temperature ] And since the inhalation of air which flows these by cooling an air cleaner 62 and the inhalation-of-air system components of carburetor 32 grade is cooled effectively, the charging efficiency of the two-cycle engine 21 is raised, and the improvement in an output is achieved.

0092] In addition, although the above example explained the engine generator driven with a two-cycle engine, as for this invention, it is needless to say that the engine generator driven by the four stroke cycle engine is also included in the candidate for application.

093]

Effect of the Invention] By the above explanation, since the fitting condition to the frame support section of rotor shaft can be checked by viewing the interior from the air hole formed in the frame, according to invention according to claim 1, attachment by the frame of a rotor shaft can be performed with sufficient workability, so that clearly. Moreover, in the edge of a rotor shaft, since a wrap frame has the good appearance of itself, covering of a wrap sake becomes unnecessary about this frame, and the effectiveness that reduction and a cost cut of components mark can be aimed at is acquired.

094] According to invention according to claim 2, since a cooling fan is formed inside the support section of the frame of a rotor shaft, the support section of a rotor shaft checks a projection therefore to the outside of a cooling fan, a cooling fan does not check viewing from an air hole, and the effectiveness that the workability with a group to the frame support section of a rotor shaft is raised much more is acquired.

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DESCRIPTION OF DRAWINGS

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## Brief Description of the Drawings]

- Drawing 1] It is the front view of the engine generator concerning this invention.
- Drawing 2] It is the top view of the engine generator concerning this invention.
- Drawing 3] It is drawing of the direction of view A of drawing 1 .
- Drawing 4] It is drawing of the direction of view B of drawing 1 .
- Drawing 5] It is the fracture front view of the engine generator concerning this invention.
- Drawing 6] It is the fracture rear-face Fig. of the engine generator concerning this invention.
- Drawing 7] It is the fracture top view of the engine generator concerning this invention.
- Drawing 8] It is the side elevation which removed the fan cover and looked at the engine generator concerning this invention from the engine side.
- Drawing 9] It is the C-C line expanded sectional view of drawing 4 .
- Drawing 10] It is a partial fracture top view by the side of the generator of the engine generator concerning this invention.
- Drawing 11] It is the sectional view showing the removal point of a cooling fan.
- Drawing 12] It is D-D line sectional view of drawing 11 .
- Drawing 13] It is the E-E line sectional view of drawing 1 .
- Drawing 14] It is the F-F line sectional view of drawing 1 .
- Drawing 15] It is the G-G line sectional view of drawing 1 .
- Drawing 16] It is the partial front view showing the condition of having removed covering of the case lower part made of resin.
- Drawing 17] It is the plane section Fig. of the case made of resin.
- Drawing 18] It is the top view showing a centrifugal-spark-advancer style and its adjustment device.
- Drawing 19] It is the H-H line sectional view of drawing 18 .
- Drawing 20] It is drawing of the direction of view I of drawing 19 .
- Drawing 21] It is the same drawing as drawing 20 which shows another example of the baffle section of the rust plate of a governor adjustment device.
- Drawing 22] It is the side elevation of an exhaust air muffler.
- Drawing 23] It is drawing of the direction of view J of drawing 22 .
- Drawing 24] It is the side elevation showing the structure of the 1st expansion interior of a room of an exhaust air muffler.
- Drawing 25] It is the K-K line sectional view of drawing 24 .
- Drawing 26] It is the L-L line sectional view of drawing 24 .
- Drawing 27] It is the M-M line sectional view of drawing 24 .
- Drawing 28] It is the expanded sectional view of the rubber mounting attachment section of the engine generator concerning this invention.
- Drawing 29] It is the bottom view of the rubber mounting attachment section of the engine generator concerning this invention.
- Drawing 30] It is the bottom view showing the modification of the support projection which supports rubber mounting.

## Description of Notations]

Engine Generator  
Frame of Generator  
1 Engine  
4 Crankshaft  
0 Generator  
0 Rotor Shaft

2 Stator  
3 Cooling Fan  
7 Air Hole

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